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Filing Date	August 4, 2000
First Named Inventor	Richard W. Ezell
Group Art Unit	2817
Examiner Name	M. Shingleton
Attorney Docket Number	49581/P022US/09906908

ENCLOSURES (*check all that apply*)

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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual Name	FULBRIGHT & JAWORSKI L.L.P. R. Ross Viguet
Signature	R Ross V
Date	July 22, 2002

Transmittal

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Dated: July 22, 2002 Signature: Rita Carr (Rita Carr)

#17/Response 8.13.02 C. Moore

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Dated: July 22, 2002 Signature: Rita Carr (Rita Carr)

Docket No.: 49581/P022US/09906908 (PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Richard W. Ezell

Application No.: 09/631,743 Group Art Unit: 2817

Filed: August 4, 2000 Examiner: M. Shingleton

For: SYSTEM AND METHOD FOR LOW-NOISE AMPLIFIER WITH A HIGH FREQUENCY RESPONSE

RESPONSE

Commissioner for Patents
Washington, DC 20231

Dear Sir:

In response to the Office Action mailed April 24, 2002, please reconsider the above-identified U.S. Patent application in view of the comments made herein.

REMARKS/ARGUMENTS

I. General

Claims 1-80 are pending in the present application, although claims 77-80 have been withdrawn from consideration by the Examiner. Applicant notes with appreciation the Examiner's indication that claims 7-24 and 36-76 stand allowed and that claims 4 and 26-35 would be allowed if rewritten in independent form to include the limitations of the base claims and any intervening claims from which they depend.

Claim 1 stands rejected under 35 U.S.C. § 102(b). Claim 25 stands rejected under 35 U.S.C. § 102(e). Claims 2, 3, 5, and 6 stand rejected under 35 U.S.C. § 103(a). Applicant respectfully traverses the rejections of record.

II. The 35 U.S.C. § 102 Rejections

Claim 1 stands rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Ibukuro, United States patent number 4,961,057 (hereinafter *Ibukuro*). Claim 25 stands rejected under 35 U.S.C. § 102(e) as being clearly anticipated by Meyer, United States patent number 6,049,251 (hereinafter *Meyer*). To anticipate a claim under 35 U.S.C. § 102, a reference must teach every element of the claim, see M.P.E.P. § 2131.

In rejecting claim 1, the Examiner relies upon an automatic gain control (AGC) amplifier shown in Ibukuro. The AGC amplifier of Ibukuro is specifically adapted to provide for differences in cable loss associated with various frequencies, see column 3, line 65, through column 4, line 2. Accordingly, the AGC amplifier of *Ibukuro* provides a non-linear frequency response which is substantially inversely proportional to the frequency/cable loss function of a cable, see column 4, lines 10-20. The adjustable capacitors of the AGC amplifier of *Ibukuro* are adjusted to compensate for a variation in cable loss from a standard loss, see column 4, lines 10-29.

Claim 1 recites a variable gain amplifier having a first amplification stage and a second amplification stage, "wherein a high frequency response of said amplifier is maintained by selectively varying an adjustable capacitor on said second amplification stage." From the above, it is clear that the AGC amplifier of *Ibukuro* does not maintain a high frequency response of the amplifier by varying an adjustable capacitor, but instead utilizes adjustment of the capacitor to adjust the amplifier gain to compensate for a variation in cable loss from a standard loss. Accordingly, it is respectfully asserted that *Ibukuro* does not meet every element of claim 1 and, therefore, claim 1 and the claims dependent therefrom are patentable over the disclosure of *Ibukuro*.

In rejecting claim 25, the Examiner relies upon the disclosure of *Meyer*. *Meyer* teaches a system in which "two wide-dynamic-range variable-gain amplifiers in two parallel signal paths are used" to provide "a high-gain, low-noise amplifier" and "a low-gain amplifier with a high-input-overload capability," see column 1, lines 56-62. The Examiner asserts that "*Meyer* discloses a method for providing a variable gain amplification having the steps of selecting the operating mode, i.e. high gain, low gain or high-overload gain modes

based at least in part upon the input signal characteristic," see the Office Action mailed April 24, 2002, at page 3.

Claim 25 recites "selecting an operating mode of a plurality of operating modes of an amplifier based at least in part on an input signal characteristic," emphasis added. It is respectfully asserted that the two wide-dynamic-range variable-gain amplifiers in two parallel signal paths of *Meyer* do not meet the recited selection of an operating mode of a plurality of operating modes of an amplifier. Accordingly, claim 25 is patentable over the disclosure of *Meyer*.

III. The 35 U.S.C. § 103 Rejections

Claims 2, 3, 5, and 6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Ibukuro*. To establish a *prima facie* case of obviousness, three basic criteria must be met, see M.P.E.P. § 2143. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Without conceding the remaining criteria, Applicant respectfully asserts that the references lack proper motivation to have led one of ordinary skill in the art to make the necessary modifications.

In rejecting claim 2, the Examiner asserts that "[i]t is conventional to make the load or 'common' resistors of an amplifier variable to control or vary the gain," and therefore "it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the appropriate resistive elements of *Ibukuro* variable so as to vary the gain as is commonly known in the art to do," see the Office Action mailed April 24, 2002, at page 3.

The motivation for modifying the AGC amplifier of *Ibukuro* provided by the Examiner appears to be an assertion that modification of the AGC amplifier to meet the claimed invention would have been well within the ordinary skill in the art. However, an assertion that the claimed invention "would have been well within the ordinary skill of the art" without some objective reason to combine or modify the references to meet the claimed invention is not sufficient to establish *prima facie* obviousness, see M.P.E.P. § 2143.01.

Alternatively, the motivation for modifying the AGC amplifier of *Ibukuro* provided by the Examiner is circular, stating that it is obvious to make the modification (add variable gain resistors) because it is obvious to achieve the result (provide variable gain). Such language is merely a statement that the reference can be modified, and does not state any desirability for making the modification. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination, see M.P.E.P. § 2143.01, citing *In re Mills*, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). Thus, the motivation provided by the Examiner is improper, as the motivation must establish the desirability for making the modification.

In rejecting claims 2 (transistor networks) and 3 (differential pairs of transistors), the Examiner asserts that "[a] differential arrangement is a balanced arrangement known in the art to be composed of two unbalanced amplifiers," and therefore "it would have been obvious to one of ordinary skill in the art at the time the invention was made to take the unbalanced arrangement and form a balanced arrangement by composing the balanced arrangement of two unbalanced amplifiers of *Ibukuro* so as to be able to amplify balanced signal as is conventionally known," see the Office Action mailed April 24, 2002, at pages 3 and 4. However, the differential arrangement relied upon by the Examiner in opining that it would have been obvious to modify *Ibukuro* to include such a configuration is derived from Applicant's own disclosure. It is well settled that the prior art must suggest the desirability of the claimed invention, M.P.E.P. § 2143.01.

There is nothing in the disclosure of *Ibukuro* to have suggested a balanced transistor configuration. Indeed, in the disclosure of *Ibukuro* the frequency characteristic of the unbalanced amplifier configuration shown therein is specifically relied upon to provide a design useful for an intended purpose (compensate for cable loss), see column 3, line 53, through column 4, line 2. There is nothing in the disclosure of *Ibukuro* to have led one of ordinary skill in the art to believe that a balanced configuration of the cascade-connection shown therein would provide AGC to compensate for cable loss.

The motivation supplied in the Office Action is derived solely from the Applicant's disclosure. The teaching or suggestion to make the claimed combination must be found in the prior art, not in Applicants' disclosure, see M.P.E.P. §2143, citing *In re Vaeck*, 20

U.S.P.Q.2d 1438 (Fed. Cir. 1991). Thus, the motivation to combine provided by the Examiner is improper, as the motivation must be described in a prior art reference and must detail the benefits of such a modification.

In rejecting claims 5 and 6, the Examiner states that "*Ibukuro* is silent on whether or not the device is formed on a single chip," but that "[a]ll the elements shown in Figure 3 are integrable and integration is a well-known structure to save space," the Office Action mailed April 24, 2002, at page 4. However, *Ibukuro* expressly teaches that "since the variable capacitors having large capacitances cannot be easily formed in LSI chip, the AGC amplifier circuit shown in FIG. 3 can not be adapted to form the LSI chip," column 4, lines 45-48. Accordingly, it appears that *Ibukuro* expressly teaches away from forming the device upon a single chip.

IV. Final Restriction Requirement

In responding to Applicant's traversal of the restriction requirement, the Examiner asserts that the identified claims depending from the evidence claim (claim 1) do not recite all the details of the combination claim (claim 77). However, there is no such requirement for rejoinder of the inventions to be reconsidered when the evidence claim is found to be unallowable, see M.P.E.P. § 806.05(c)III. Accordingly, Applicant maintains that until claim 1 is allowed, rejoinder of the inventions may properly be reconsidered by the Examiner. Applicant asks for such reconsideration by the Examiner in the event claim 1 is not allowed. However, Applicant intends to cancel the withdrawn claims upon allowance of the remainder of the claims if the restriction requirement is maintained.

V. Summary

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

Applicant respectfully requests that the Examiner call the below listed attorney if the Examiner believes that a discussion would be helpful in resolving any remaining problems.

Dated: July 22, 2002

Respectfully submitted,

By R. Ross Viguet

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